Irene Y. Wang, Ph.D.
Cancer Research Institute
School of Medicine
University of California
San Francisco, California 94122

Genetic Differences in the In Vitro Metabolism of Chemical Carcinogens by Human and Mouse Tissues.

Several polycyclic aromatic hydrocarbons (PAH) are potent chemical carcinogens on animals tested, and some of the PAH are distributed widely in our environment. PAH need metabolic activation to bind to critical cellular components in tissues and cause cancer. Comparison of genetic differences in the capability of tissues to convert PAH to various derivatives may establish correlations between the metabolite patterns of PAH produced by various tissues and the susceptibility of the species or strains of animals to the carcinogenic action of PAH.

Microsomes from tissues of different strains of mice will be used for studying metabolite patterns of PAH. Metabolites of PAH will be separated by thin layer chromatography, and identified by comparison with authentic compounds, radioscanning, and UV spectroscopy. Metabolites of PAH produced by cultured human lymphocytes will be similarly analyzed.

Strains of mice with high or low inducibility in aromatic hydrocarbon hydroxylase (AHH) activity are being used at the beginning stage of the study. Among the strains of mice studied, either in control or in pretreated mice, there are quantitative differences in the yield of various metabolites of benzo(a)pyrene, which is one of the potent carcinogenic PAH.

Activation Date: January 1, 1975

Current Grant Level: $65,926.

10050754 38

Source: https://www.industrydocuments.ucsf.edu/docs/lrmk0000